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10/715,621	11/18/2003	Randolph L. Durrant	42P11602CD	4875

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EXAMINER	
FARAGALLA, MICHAEL A	
ART UNIT	**PAPER NUMBER**
2617	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/08/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/715,621	DURRANT ET AL.	
	Examiner	Art Unit	
	Michael Faragalla	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims **1-26** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claims 1-26 seem to be directed toward a location detection method that uses a time of arrival method in order to determine the location of a mobile terminal. However, there is no support in the specification to enable one skilled in the art to interpret the claimed invention. The only mention of measuring the time difference of arrival seems to start on page 22 of the specification, and that is directed to the propagation delay between the mobile and the base station. It is not clear exactly if the round trip delay involves the repeaters tagging the signals received from a mobile device.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims **1-3** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Consider **Claims 1-3,** claims 1 mentions "a discriminator to detect unique signal tags in signals sent from a transmitter", the transmitter is hear read as the transmitter of the repeater, because the signal appears to be tagged already. The claim further mentions "a TOA (time of arrival) receiver to measure a propagation time delay for the signals from the transmitter", the transmitter is hear read as a mobile device. Therefore, it is not clear for the examiner what exactly does a "transmitter' in this claim refer to. For purpose of examination, the "transmitter" would be read as a mobile device.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claims**1-10, and 13-26** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Sanderford, Jr. et al (Patent number: 4,799,062)** in view of **Levinson et al (Patent number: 5,223,816).**

Consider **Claim 1,** Sanderford, Jr. et al clearly disclose an apparatus (read as central monitoring station) comprising:

(a) A discriminator to detect unique signal tags in signals sent from a transmitter (read as mobile device), the unique signal tags generated by signal repeaters, to demodulate signal tags, and to generate repeater IDs from the signal tags (abstract; figure 2; column 11, lines 20-35); (the base repeaters collect signals from a transmitter redress the base repeaters ID numbers, and send the signals to the central monitoring station for calculation).

(b) A TOA (time of arrival) receiver to determine a propagation time delay for the signals from the transmitter (column 11, lines 29-42); (the central monitoring computer calculates the position of the transmitter based on the time of arrival information).

(c) The discriminator and TOA receiver being coupled to a location center (LC) to determine a position of the transmitter based on the TOA receiver measurements and the repeater IDs (column 11; lines 30-40); (the discriminator is inherently taught in the reference because the central monitoring station is receiving multiple signals with multiple repeater IDs in order to process them. Furthermore, the LC is read to be central monitoring computer).

However, Sanderford, Jr. et al teach a TOA receiver for determining a propagation delay for the signals from the transmitter, but do not specifically teach a TOA receiver to measure a propagation delay for the signals from the transmitter.

In related art, Levinson et al teach a TOA receiver to measure a propagation delay for the signals from the transmitter (figure 6; column 4, lines 60-67; column 5, lines 1-12).

Therefore, it would have been obvious to a person skilled in the art at the time the invention was made to incorporate the teaching of Levinson et al into the teaching of

Sanderford, Jr. et al in order to determine accurate position of a mobile device (Levinson et al, column 1, lines 30-35).

Consider **Claim 4,** Sanderford, Jr. et al clearly disclose a system comprising:

(a) A receiver to receive a tagged signal generated by a signal repeater, the original signal being sent from a transmitter (mobile device) (abstract; figure 2; column 11, lines 20-35); (the base repeaters collect signals from a transmitter redress the base repeaters ID numbers, and send the signals to the central monitoring station for calculation).

(b) A corresponding location management unit coupled to the base station to demodulate the tagged signal, and generate a repeater ID signal therefrom (column 11, lines 25-32); (the central monitoring station collects signals coming from multiple repeaters and sent to a central monitoring computer in order to derive the position of the mobile device).

(c) A location center (read as central monitoring computer) coupled to the location management unit to determine the position of the transmitter based on the TOA receiver measurements and the repeater ID (column 11, lines 30-40).

However, Sanderford, Jr. et al shows receiving a tagged signal generated by a signal repeater, but does not specifically show that the signal is electronically tagged.

In related art, Levinson et al show that the signal is electronically tagged (column 3, lines 55-67).

Therefore, it would have been obvious to a person skilled in the art at the time the invention was made to incorporate the teaching of Levinson et al into the teaching of

Sanderford, Jr. et al in order to compare by means of a microprocessor the time each relay received the portable transmitter's signal (Levinson et al, column 2, lines 43-48).

Consider **Claim 7,** Sanderford, Jr. et al clearly disclose a location measurement unit (LMU) comprising:

(a) A time of arrival (TOA) receiver to receive signals from a mobile unit (column 1,20-25; figure 2; abstract).

(b) A discriminator to detect signal tags in the received signals, the tags identifying a repeater through which the signal was received (abstract; figure 2; column 11, lines 20-35); (the base repeaters collect signals from a transmitter redress the base repeaters ID numbers, and send the signals to the central monitoring station for calculation).

(c) A database having geographical coordinates of identified repeaters (column 1, lines 1-10; column 2, lines 50-55).

(d) A mobile location center (MLC) to determine a position of the mobile unit from the TOA receiver measurements, and the repeater IDs using the database (column 11, lines 20-35); (when the central monitoring station collects received signals, it forwards them to the central monitoring computer in order to derive the position of the mobile device).

However, Sanderford, Jr. et al discloses a time of arrival (TOA) receiver to receive signals from a mobile unit, but do not specifically show that the TOA receiver measures a propagation delay between the mobile unit and the LMU.

In related art, Levinson et al show that the TOA receiver measures a propagation delay between the mobile unit and the LMU (figure 6; column 4, lines 60-67; column 5, lines 1-10).

Therefore, it would have been obvious to a person skilled in the art at the time the invention was made to incorporate the teaching of Levinson et al into the teaching of Sanderford, Jr. et al in order to determine the location of a portable transmitter (Levinson et al, column 1, lines 54-58).

Consider **Claim 13,** Sanderford, Jr. et al clearly disclose a cellular telephony base station comprising:

(a) A diplexed antenna; a time of arrival (TOA) receiver coupled to the antenna to receive signals from a cellular telephone (column 11, lines 29-42); (the central monitoring computer calculates the position of the transmitter based on the time of arrival information).

(b) A frequency discriminator to detect signal tags in the received signals, the tags identifying a repeater through which the signals are received (column 11; lines 30-40); (the discriminator is inherently taught in the reference because the central monitoring station is receiving multiple signals with multiple repeater IDs in order to process them. Furthermore, the LC is read to be central monitoring computer).

(c) A mobile location center (MLC) to determine a position of the cellular telephone from the TOA receiver measurements, and the repeater IDs (column 11, lines 20-35); (when

the central monitoring station collects received signals, it forwards them to the central monitoring computer in order to derive the position of the mobile device).

However, Sanderford, Jr. et al discloses a time of arrival (TOA) receiver to receive signals from a mobile unit, but do not specifically show that the TOA receiver measures a propagation delay between the telephone and the base station.

In related art, Levinson et al show that the TOA receiver measures a propagation delay between the telephone and the base station (figure 6; column 4, lines 60-67; column 5, lines 1-10).

Therefore, it would have been obvious to a person skilled in the art at the time the invention was made to incorporate the teaching of Levinson et al into the teaching of Sanderford, Jr. et al in order to determine the location of a portable transmitter (Levinson et al, column 1, lines 54-58).

Consider **Claim 16,** Sanderford, Jr. et al clearly disclose a method comprising:

(a) Receiving signals from a mobile unit (abstract; figure 2; column 11, lines 20-35).

(b) Measuring the propagation time delay of the received signals (column 11, lines 20-30).

(c) Detecting tags in the received signals to generate a repeater ID for each signal including a tag, the tags identifying a repeater through which the signal was received (abstract; figure 2; column 11, lines 20-35); (the base repeaters collect signals from a transmitter redress the base repeaters ID numbers, and send the signals to the central monitoring station for calculation).

(d) Determining a position of the mobile unit from the TOA receiver measurements, and repeater IDs (column 11, lines 30-40).

However, Sanderford, Jr. et al show detecting tags in the received signals including a tag, but do not specifically show detecting tags in the received signals containing a tag.

In related art, Levinson et al show detecting tags in the received signals containing a tag (figure 6; column 4, lines 60-67; column 5, lines 1-10).

Therefore, it would have been obvious to a person skilled in the art at the time the invention was made to incorporate the teaching of Levinson et al into the teaching of Sanderford, Jr. et al in order to determine exact location of a relay (column 3, lines 65-67).

Consider **Claims 2 and 5,** the combination of Sanderford, Jr. et al and Levinson et al shows the apparatus of claim 1, as well as the system of claim 4, wherein the transmitter comprises a mobile unit, and the location center comprises a mobile location center (MLC).

Consider **Claims 3 and 6,** Sanderford, Jr. et al as modified by Levinson et al show the apparatus of claim 2, as well as the system of claim 5, wherein the MLC determines the position of the transmitter based on the TOA receiver measurements and the repeater ID by looking up the TOA receiver measurements and the repeater ID in a database that includes geographical coordinates of the repeater corresponding to the repeater ID

and a number of corresponding base stations (abstract; figure 2, column 1, lines 1-25; column 11, lines 20-30).

Consider **Claims 8 and 24,** Sanderford, Jr. et al as modified by Levinson et al show the unit of claim 7, as well as the method of claim 16, wherein determining a position comprises converting the propagation time delay measurements to distance measurements (column 11, lines 35-45).

Consider **Claim 10,** the combination of Sanderford, Jr. et al and Levinson et al shows the unit of claim 7, further comprising a diplexed antenna coupled to the TOA receiver.

Consider **Claim 15,** Sanderford, Jr. et al as modified by Levinson et al show the base station of claim 13, further comprising a database having geographical coordinates of identified repeaters, and wherein the MLC determines the position using the database (column 11, lines 20-30; abstract; column 2, lines 50-55).

Consider **Claim 17,** Sanderford, Jr. et al as modified by Levinson et al show the method of claim 16, wherein receiving signals comprises receiving signals at a time of arrival (TOA) receiver of a location measurement unit (column 11, lines 20-25).

Consider **Claim 18,** the combination of Sanderford, Jr. et al as and Levinson et al shows the method of claim 17, wherein measuring the propagation time delay

comprises measuring the propagation time delay between the mobile unit and the TOA receiver.

Consider **Claim 19,** Sanderford, Jr. et al as modified by Levinson et al show the method of claim 16, wherein detecting tags comprises detecting tags at a frequency discriminator of the location measurement unit (column 11, lines 20-25).

Consider **Claim 20,** the combination of Sanderford, Jr. et al as and Levinson et al shows the method of claim 16, wherein detecting tags comprises detecting a frequency shift by comparing a frequency of a received signal to a frequency of a second signal from the same repeater.

Consider **Claim 21,** Sanderford, Jr. et al as modified by Levinson et al show the method of claim 20, wherein the second signal comprises a synchronization channel signal (column 3, lines 35-45).

Consider **Claim 22,** Sanderford, Jr. et al as modified by Levinson et al show the method of claim 16, wherein the tags comprise modulation signature applied to the received signal by the identified repeater (column 3, lines 5-21).

Consider **Claim 25,** Sanderford, Jr. et al as modified by Levinson et al show the method of claim 16, wherein determining a position comprises applying the repeater IDs to a

database including geographical coordinates of repeaters (abstract; figure 2, column 1, lines 1-25; column 11, lines 20-30).

Consider **Claim 26,** the combination of Sanderford, Jr. et al as and Levinson et al shows the method of claim 16, wherein determining a position comprises determining a position on an arctangent basis.

Consider **Claims 9,14, and 23,** Sanderford, Jr. et al as modified by Levinson et al show the unit of claim 7, as well as the base station of claim 13, as well as the method of claim 22, wherein the signal tags comprise frequency shift keying (FSK) modulation (column 1, lines 15-25).

9. Claim **11** rejected under 35 U.S.C. 103(a) as being unpatentable over **Sanderford, Jr. et al (Patent number: 4,799,062)** in view of **Levinson et al (Patent number: 5,223,816)** and further in view of **Yun (Patent number: 5,945,9490).**

Consider **Claim 11,** Sanderford, Jr. et al as modified by Levinson et al show the unit of claim 7, but fail to specifically show that the unit further comprising a filter/diplexer coupled to the diplexed antenna.
However, in related art, Yun shows that the unit further comprising a filter/diplexer coupled to the diplexed antenna (figure 6).

Therefore, it would have been obvious to a person skilled in the art at the time the invention was made to incorporate the teaching of Yun into the teaching of Sanderford, Jr. et al as modified by Levinson et al in order to recover the time stamp (Yun, column 2, lines 40-41).

10. Claim **12** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Sanderford, Jr. et al (Patent number: 4,799,062)** in view of **Levinson et al (Patent number: 5,223,816)** and further in view of **Bishop et al (Patent number: 6,377,782).**

Consider **Claim 12,** Sanderford, Jr. et al as modified by Levinson et al show the unit of claim 7, but fail to specifically show that the unit further comprising an I/Q demodulator coupled to the frequency discriminator.

However, in related art, Bishop et al, show that the unit further comprising an I/Q demodulator coupled to the frequency discriminator (column 16, lines 40-67).

Therefore, it would have been obvious to a person skilled in the art at the time the invention was made to incorporate the teaching of Bishop et al into the teaching of Sanderford, Jr. et al as modified by Levinson et al in order to convert the signals to digital form (Bishop et al, column 16, lines 50-55).

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

(1) METHOD AND APPARATUS FOR USING SATELLITES FOR REVERSE PATH COMMUNICATION IN DIRECT-TO-HOME SUBSCRIPTION INFORMATION SYSTEMS **(Patent number: 5,708,963).**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Faragalla whose telephone number is (571) 270-1107. The examiner can normally be reached on Mon-Fri 7:30 am-5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nick Corsaro can be reached on (571) 272-7876. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michael Faragalla

03/04/2007

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